

PINEMAT MANZANITA

Arctostaphylos nevadensis
Gray
plant symbol = ARNE

Contributed By: Santa Barbara Botanic Garden & USDA, NRCS, National Plant Data Center



Charles Webber
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Uses

Conservation: Pinemat reduces erosion on steep slopes and along trails and roads.

Wildlife: Bear, deer, and other small mammals and a wide array of birds, including grouse, utilize the fruits of hairy manzanita. California mule deer may browse the foliage.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description

General: Heath Family (Ericaceae). Pinemat manzanita, is a low growing, native, evergreen shrub, generally less than 1 m tall, and with spreading or

decumbent branches. It does not have a basal burl and does not crown sprout, but often roots at the nodes of the lowermost branches. The bark of young twigs is sparsely white-woolly, but the mature bark is smooth and reddish brown. Leaves are short-petioled, with ovate to elliptic blades that are 1.5 to 3 cm long, 1 to 1.5 cm wide, bright green, with acute apices, and minutely hairy or glabrous on both sides. The flowers, which open from May to July, are arranged in racemes with mostly scale-like, linear bracts that are 2-5 mm long. The urn-shaped, white corollas are 6-8 mm long. The fruits are depressed-globose, 6-9 mm in diameter, smooth and reddish brown, with a mealy pulp that encloses several, hard-walled seeds.

Distribution

Native to Washington, Oregon, California, and Nevada. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site. Also, check the CalFlora Web site.

Establishment

Adaptation: Pinemat manzanita occurs on rocky slopes and outcrops from 5000 to 10,000 feet throughout the Cascades south to the Klamath Mountains and Sierra Nevada of California. It is a common understory shrub of several coniferous forest communities, dominated either by fir, hemlock, yellow pine, or lodgepole pine. Common associates include currant, chinquapin, huckleberry oak, and ocean spray. Its geographic range is generally characterized by warm, relatively dry summers and cold winters with precipitation ranging from 25 to 85 inches per year, much of it as snow. Pinemat manzanita prefers well drained, acidic soils in open sunny sites. It has a high tolerance for cold, below-freezing winters, and depends on snow cover to protect dormant buds. Occasional fires may be important to successful seed germination and establishment.

Natural Establishment: *Arctostaphylos nevadensis*, like most manzanita species, requires insect visitation to ensure seed-set. Bees that grasp the flower and shake them by actively beating their wings pollinate the flowers. This process, like shaking a salt and pepper container, permits efficient collection of the pollen, which is used for food. Fruits are dispersed primarily by animals, which presumably aid germination by digesting the fruit and softening the outer seed coat. However, natural germination is sporadic, except after fire, which cracks the hard coat of seeds that have accumulated in the litter layer. Pinemat manzanita prefers loose, well-drained soils

and, like other members of the heath family (Ericaceae), has an obligate relationship with mycorrhizal fungi.

Seed Propagation: Propagation from seed is difficult, because of the thick, bony seed walls and low rates of germination (less than 10%) without treatment. However, if propagation from seed is desired, treatment must ensure that the seed coat is broken without damaging the embryo. Individual seeds may be filed with a steel file, but larger quantities can be treated by placing them into a container of boiling water that is removed from the source of heat after 1-2 minutes. Seeds also respond well to burning, which is accomplished by firing a 4-inch deep layer of combustible leaves and twigs over a flat planted with seeds. These treatments crack the seed coats, but may reduce viability. Treated seeds should be stratified in a moist mix of milled sphagnum and beach sand for 2-8 months until they germinate. Other techniques, including use of sulfuric acid to soften the seed coat, may enhance germination, but also requires special precautions against spillage and contamination.

Vegetative Propagation: Vegetative propagation is preferred over seed propagation. Pinemat manzanita is most easily propagated by cutting terminal shoots that include 1-2 inches of the woody stem from the previous year. Cuttings work best if taken between April and June and should be dipped in a rooting hormone before being placed in a moist sand-peat mixture. Cuttings need to be kept moist by regular watering or misting until roots appear. Once rooted, they should be transplanted into small containers using potting soil, to allow for proper root development. Manzanitas generally do not transplant well, so they should be grown to vigorous conditions in one-gallon containers and then moved to a permanent position in the late fall or early winter. Relatively slow growth rates during the first few years can be expected. If plants are used in an urban landscape, the use of organic-rich soils and acidified fertilizers is recommended.

Management

Under natural conditions, no special management is required to maintain established manzanitas. Either scarified seeds or well-rooted container plants may be used to re-vegetate cleared sites. In the urban landscape, several horticultural techniques should be used to ensure healthy plants. All manzanitas should be planted higher than the surrounding soil to prevent crown rot, which can result from excessive water and soil moisture, especially during the summer. Overhead watering should also be avoided, because it

tends to encourage fungal diseases (e.g., *Botryosphaeria*) that cause branch die-back and leaf spot. Periodic watering every 4-6 weeks will keep foliage healthy without weakening plants. Mulching is desirable to control weeds, retain soil moisture, and reduce the need for irrigation. Rock mulches have proven more successful than organic mulches. Pruning should be avoided and used only to remove dead wood and diseased branches.

Cultivars, Improved and Selected Materials (and area of origin)

Please check the Vendor Database, expected to be on-line through the PLANTS Web site in 2001 by clicking on Plant Materials. This species is available from native plant nurseries within its area of distribution.

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